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DENVER MUSEUM of NATURAL HISTORY

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January 26, 1975

Ms. April Volk
Environmental Division
Dow Chemical
Rocky Flats Division
Box 888
Golden, Colorado

Ms. Volk,

On behalf of the staff and director of the Museum, John Slay and I wish to thank you for calling us concerning the Archaeological site.

Enclosed is a copy of our site report sent to the State Archaeologist and a copy of the article on State and Federal regulation of Archaeological sites.

Sometime, if you have time, John and I would like you to stop by the Museum so that we can show you some typical prehistoric artifacts from the Rocky Flats area. If you find any more sites, we would be happy to come out and look at them.

Thank you,

Richard K. Stucky
Richard K. Stucky

ADMIN RECCRD
SW-A-003523

ARCHAEOLOGICAL SURVEY OF COLORADO
INVENTORY SHEET

5-JF-79

Site No. Jefferson County, Colorado State Woman Creek Drainage

1. Prior No./Name _____ Used By _____

2. Elevation 6040 3. Louisville USGS Quad 4. Other Map _____

5. LOCATION 2 kilometers E. from Colo. Highway 93 on West Access Road and South 0.4 Kilometers.

U.T.M. Zone _____
6. SEC. 15 TOWNSHIP 2 S. RANGE 70 W.
Dow Chemical - Rocky Flats Div.

6. Owner U.S. Government 7. Address P.O. Box 822, Golden, Colo.

8. Tenant Energy Res. Develop. 9. Prior Owner(s) Atomic Energy Comm.

10. Informant April Volk 11. Address Rocky Flats - Environmental Div.

12. NEAREST WATER Woman Creek permanent ✓, season _____

13. Distance to 12 50 M. 14. Elevation of 12 6000

15. LOCALE VEGETATION short grass grassland (grama grass)

16. SITE TYPE Rock piles 17. Cultural Affiliation (if known) unknown

18. Description Eight low, circular rock piles and rings on top of earth mound located in Woman Creek drainage. Mound is 67.5 M X 15 M X 6 M and

19. Size see 18 20. Faces to (cardinal direction) E - W

21. Depth & Character of Deposits Not tested

22. Material Observed or Reported None

23. Material Collected None

24. Condition _____

25. RECOMMENDATIONS _____

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26. Photograph Nos. _____ 27. Recorded By R. Stuckey & J. Slav
28. Date 1/20/79

SEE REVERSE
& CONTINUATION SHEET
Nos. _____

SEND TO - Office of the State Archaeologist
University of Colorado
Boulder, Colorado 80502

Site No. 5-JF-79

ITEM No.

COMMENT

18 lies in E-W direction. The structures are composed of rocks which occur in abundance in local ancient river terraces and appear to have been arranged by human action rather than by natural forces. They range in height from 10 to 20 cm. and the diameters are from 1.1 M to 3 M. As shown on the map, the "Rock structures have been numbered from 1 through 8. The measured diameters are as follows: #1 - 1.7 M, #2 - 3.0 M, #3 - 2.9 M, #4 - 2 M, #5 - 1.6 M, #6 - 2.3 M, #7 - 1.3 M, #8 - 1.1 M. Note: #2 and #3 structures are actually depressions 10 cm. deep, encircled by a single ring of rock. The other structures are low, circular rock piles.

There appears to be seven similar structures on a steep slope 45 M. south of the mound. However, these structures are badly eroded and were not measured.

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Recorded by R. Stuckey & J. Slaw

Date 1/26/75

DETAILED MAP OF

Site No. 5-JF-77

Feature No.

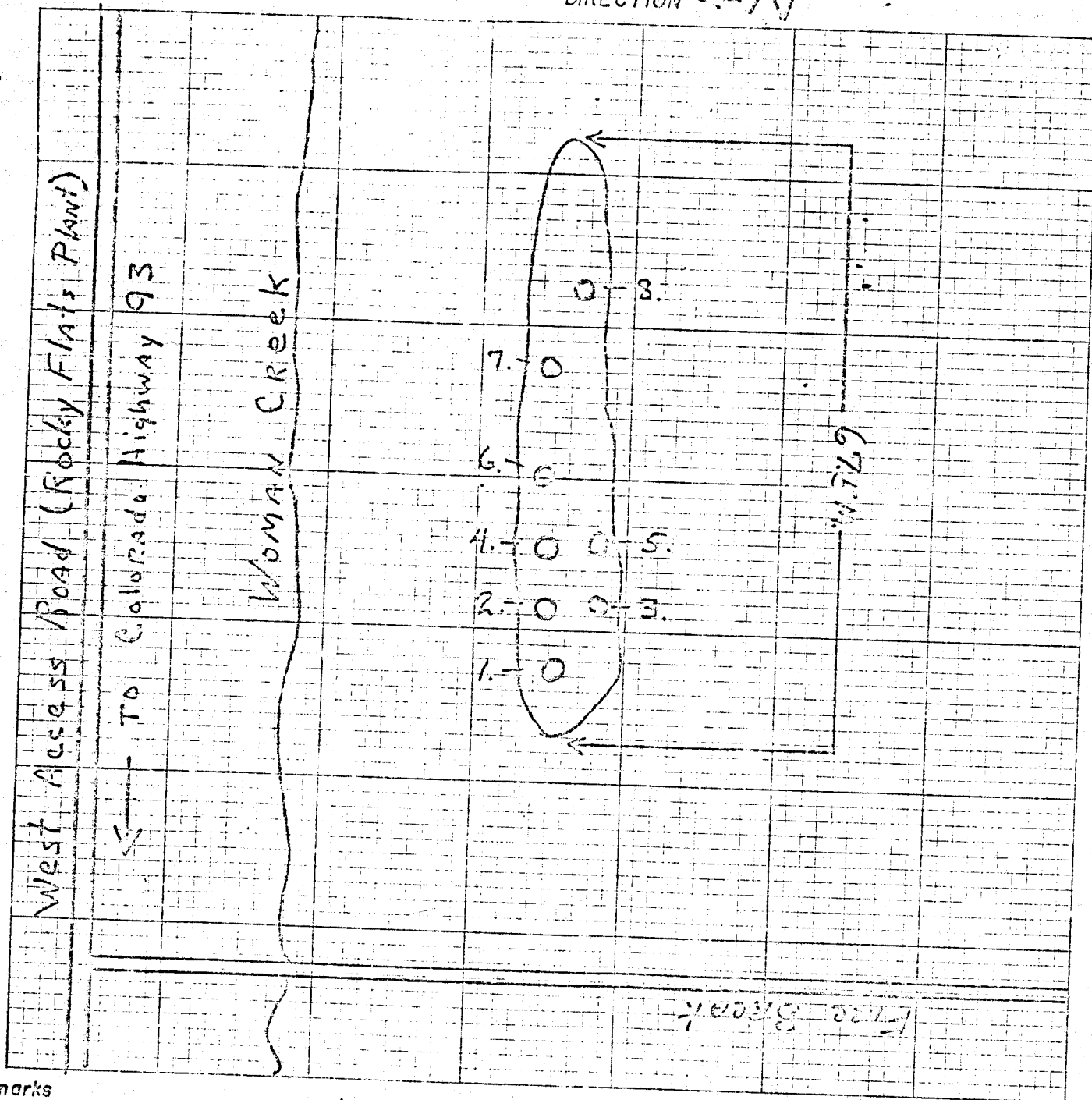
Provenience

Recorded by R. Stuckey & J. Slay Date 1/20/75

Indicate map scale, the cardinal direction NORTH, orientation of vertical profiles, and directions and distances to 2 readily identifiable nearby permanent landmarks.

SCALE

DIRECTION ← N



Remarks

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GUIDELINES FOR ARCHAEOLOGICAL ACTIVITIES REQUIRED UNDER CURRENT COLORADO AND FEDERAL LAWS¹

James J. Hester: Acting State Archaeologist
University of Colorado
Boulder, Colorado 80302

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INTRODUCTION

Exploration and development of mineral resources requires a variety of activities which result in alteration of the land surface. These range from minor activities such as driving over the land surface to complete destruction of that surface through open pit mining. All such activities--the drilling of test holes; construction of roads, pipelines, and electrical transmission lines; leveling of land at well heads; etc.--result in some destruction of the surface and, if present, the destruction of any archaeological sites at those locations. Under current laws, destruction of any archaeological sites is specifically prohibited on all lands in Colorado within State and Federal ownership. A brief resume of the pertinent portions of the existing antiquities legislation is presented below.

EXISTING ANTIQUITIES LEGISLATION

The Federal Antiquities Act of 1906

"That any person who shall appropriate, excavate, injure or destroy any historic or prehistoric ruin or monument, or any object of antiquity, situated on lands owned or controlled by the Government of the United States, without the permission of the Secretary of the Department of the Government having jurisdiction over the lands on which said antiquities are situated, shall upon conviction be fined in a sum of not more than five hundred dollars or be imprisoned for a period of not more than ninety days, or shall suffer both fine and imprisonment, in the discretion of the court."

"That permits for the examination of ruins, the excavation of archaeological sites, and the gathering of objects of antiquity upon the lands under their respective jurisdictions may be granted by the Secretaries of the Interior, Agriculture, and War to institutions which they may deem properly qualified to conduct such examinations, excavations, or gathering, subject to such rules and regulations as they may prescribe: *Provided*, that the examinations, excavations, and gatherings are undertaken for the benefit of reputable museums, universities, colleges or other recog-

nized scientific or educational institutions, with a view to increasing the knowledge of such objects, and that the gatherings shall be made for permanent preservation in public museums."

The Historic Sites Act of 1935

"...it is hereby declared that it is a national policy to preserve for public use historic sites, buildings and objects of national significance for the inspiration and benefit of the people of the United States."

Among the numerous duties assigned the Secretary of the Interior and delegated to the National Park Service by this Act are the following:

"Make a survey of historic and archaeological sites, buildings, and objects for the purpose of determining which possess exceptional value as commemorating or illustrating the history of the United States."

"Restore, reconstruct, rehabilitate, preserve, and maintain historic or prehistoric sites, buildings, objects, and properties of national historical or archaeological significance and where deemed desirable establish and maintain museums in connection therewith."

The Historic Preservation Act of 1966

"The Secretary of the Interior is authorized to expand and maintain a national register of districts, sites, buildings, structures, and objects significant in American history, architecture, archeology, and culture, hereinafter referred to as the National Register, and to grant funds to States for the purpose of preparing comprehensive statewide historic surveys and plans, in accordance with criteria established by the Secretary, for the preservation, acquisition, and development of such properties."

The Reservoir Salvage Act of 1960 (as amended in 1974)

"That it is the purpose of this Act to further the policy set forth in the (Historic Sites Act of 1935) by specifically providing for the preservation of historical and archaeological data (including relics and specimens) which might otherwise be irreparably lost or destroyed as the result of (1) flooding, the building of access roads, the erection of workmen's communities, the relocation of railroads and highways, and other alteration of the terrain caused by the construction of a dam by any agency of the United States, or by any private person or corporation holding a license issued

¹Manuscript received, July 31, 1974; accepted, September 1, 1974.

by any such agency or (2) any alteration of the terrain caused as a result of any Federal construction project or Federally licensed project, activity, or program."

The National Environmental Policy Act of 1969

"It is the continuing policy of the Federal Government, in cooperation with State and local governments, and other concerned public and private organizations to use all practicable means and measures, including financial and technical assistance, in a manner calculated to foster and promote the general welfare, to create and maintain conditions under which man and nature can exist in productive harmony, and fulfill the social, economic, and other requirements of present and future generations of Americans."

"...It is the continuing responsibility of the Federal Government to...preserve important historic cultural and natural aspects of our national heritage.."

"...all agencies of the Federal Government shall...include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on - (i) The environmental impact of the proposed action, (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented, (iii) alternatives to the proposed action, (iv) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and (v) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented."

The President's Executive Order 11593

"The heads of Federal agencies shall:...locate, inventory and nominate to the Secretary of the Interior all sites, buildings, districts, and objects under their jurisdiction or control that appear to qualify for listing on the National Register of Historic Places."

The Colorado Antiquities Act of 1973

"The state of Colorado reserves to itself title to all historical, prehistorical, and archaeological resources in all lands, rivers, lakes, reservoirs, and other areas owned by the state. Historical, prehistorical, and archaeological resources shall include all deposits, structures or objects which provide information pertaining to the historical or prehistorical culture of people within the boundaries of the state of Colorado as well as fossils and other remains of animals, plants, insects, and other objects of natural history within such boundaries."

The State Historical Society shall: "Issue or deny permits for the investigation, excavation, gathering, removal from the natural state, of any historical, prehistorical, and archaeological resources within the state, and to determine whether or not the applicants or such permits are duly qualified to conduct investigations in the field for which the permit is requested."

"Any person who shall hereafter knowingly and willfully, appropriate, excavate, injure or destroy any historical, prehistorical, or archaeological resources, without a permit from the society shall be deemed guilty of a misdemeanor, and upon conviction shall be punished

by a fine not to exceed five hundred dollars, or by imprisonment in the county jail for not more than thirty days, or by both such fine and imprisonment. All articles and materials illegally collected, and all the moneys and materials derived for the sale or trade thereof, or both, shall be forfeited to the society."

The Colorado Land Use Act of 1974 (House Bill 1041)

"The protection of the utility, value, and future of all lands within the state, including the public domain as well as privately owned land, is a matter of the public interest."

"Local governments have the duty to identify, designate, and administer such areas and activities of state interest and establish minimum criteria for the administration of such areas and activities."

"Historical or archaeological resources of regional or statewide importance means resources which have been officially included in the National Register of Historic Places designated by statute, or included in an established list of places compiled by the State Historical Society."

"Areas containing, or having a significant impact upon historical, natural, or archaeological resources of regional or statewide importance shall be administered in a manner that will allow man to function in harmony with, rather than be destructive to these resources... Development in areas of historic, educational, archaeological or natural value shall be conducted in a manner which will minimize depletion of those resources for future use."

THE MEANING OF CURRENT ANTIQUITIES LEGISLATION

The intent of Federal and Colorado State laws is clear: It is the policy of these governments to inventory and protect all archaeological and historical sites on lands within their ownership. Furthermore, it is their policy to incorporate information on such sites into land-use planning so as to minimize their destruction by future development projects not only on their lands but also on all lands within the state.

It is a misdemeanor to collect objects from such sites or to destroy them in any way. Study or excavation of such sites is controlled by the issuance of both state and federal permits. Such permits are issued to qualified archaeologists who are affiliated with recognized colleges and museums.

Finally, all projects requiring the preparation of an Environmental Impact Statement are reviewed by the appropriate state and federal agencies. These agencies are charged with the responsibility of evaluating the impacts on archaeological and historical sites. A clearance from these agencies must be obtained before the proposed project may be initiated.

COPING WITH PRESENT ANTIQUITIES LEGISLATION

A basic question facing the individual mineral resource company is how to comply with the legislation discussed above in ways that are legal and expedient - that is, how to best obtain the appropriate archaeological clearance with a minimum of difficulty and expense.

An initial step is to contact the appropriate state

and federal agencies. Archaeological sites in Colorado are cleared by the Office of the State Archaeologist, Ketchum 5A, University of Colorado, Boulder, Colorado 80302 (telephone 303-449-0630). Historical sites are cleared by the Colorado State Historical Society, State Museum Building, 200 Fourteenth Avenue, Denver, Colorado 80203 (telephone 303-892-2136). The Bureau of Land Management has its own archaeologist for Colorado. The address is 1600 Broadway, Denver, Colorado 80203 (telephone 303-837-4481). For information on lands owned by other Federal agencies, the coordinating agency is the U.S. National Park Service, Midwest Archaeological Center, 2605 North 27th Street, Lincoln, Nebraska 68504 (telephone 402-475-3666).

Contact with these agencies will provide information as to the requirements covering any specific project. Normally what is required is an on-the-ground survey by a competent archaeologist of the area to be affected. Sites so located are evaluated as to their potential. Those sites that are deemed important which will be destroyed by construction must be excavated by a qualified archaeologist. Sites which may be avoided by construction may be fenced or otherwise protected from vandalism. Sites of national significance will be nominated for the National Registry of Historic Places.

Typically, the responsibility for the contracting of the archaeological work is delegated to the corporation proposing the development. A typical lease is that of the Bureau of Land Management for the Prototype Oil Shale Leases in the Piceance Creek basin, Colorado. The relevant portions of that lease agreement is reproduced below:

"Sec. 6. *Historical and Scientific Values.* (A) *Cultural Investigations.* The lessee shall, prior to construction or mining, conduct a thorough and professional investigation of any portion of the Leased Lands to be used, including, but not limited to, those to be used for mining, processing, or disposal operations or roads, for objects of historic or scientific interest including but not limited to Indian ruins, pictographs, and other archaeological remains. The lessee shall report the results of these investigations to the Mining Supervisor before commencing construction and mining operations.

(B) *Objects of Historic or Scientific Interest.* The Lessee shall not in any activities under this lease appropriate, remove, injure, deface or alter any object of antiquity or of historic, prehistoric, or scientific interest, including but not limited to, Indian ruins, pictographs, and other archaeological remains. Where a question exists as to whether or not an object is of historic, prehistoric, or scientific interest or is an object of antiquity, the Lessee shall report to the Mining Supervisor for a final determination of which he shall inform the Lessee without unnecessary delay" (Department of the Interior, 1973).

In the context of the above lease agreement, it is somewhat unclear as to what constitutes a "thorough and professional investigation." The following guidelines define the differing levels of competence required and the different kinds of studies that may be carried out. Some generalized estimates of the associated costs are also included.

Criteria for Determining Level of Competence

For Individuals

- Education:** At least MA-level training in anthropology or a closely related discipline. If training was received in a non-MA granting institution, the applicant must have completed the PhD qualifying examinations or equivalent.
- Experience:** Supervision of at least 1 survey or excavation project in any district for which competence is claimed, that has resulted in a publication-quality manuscript.
- Affiliation:** Demonstrate connection with an institution or organization with facilities for storage and care of archaeological data and materials.

For Institutions

1. The person or persons accepting direct responsibility for the institution's archaeological program must meet the educational criterion given above.
2. The institution as a whole must have been responsible for at least 1 survey or excavation project in each district for which competence is claimed, that has resulted in a publication or publication-quality manuscript.
3. The institution must demonstrate that it will maintain facilities adequate for the care and storage of archaeological data and materials (American Society of Conservation Archaeology, 1974).

SOME WORKING DEFINITIONS IN CONTRACT ARCHAEOLOGY

Literature Search - an examination of published reports, manuscripts, and site survey files to determine site types and cultures present within an area. Known site locations may also be plotted. Occasionally, it is possible to estimate the site density and site situation utilized. Such a search is useful for the preparation of an environmental assessment and field study plans. Normally, such a search would cost, on large areas, a few cents per acre. In some cases, no data are available; and, rarely, extensive data are already known.

Reconnaissance - a cursory examination of a region to locate actual sites as a means of determining site situations utilized and site types present. Normally, such a study is conducted according to some sampling design. Specific land forms are examined and specific tracts may be surveyed in order to provide a statistically valid sample. Such reconnaissance provides data which may be used to estimate site density and the associated study costs. Costs of a reconnaissance range from 5 to 25 cents per acre on large projects.

Inventory - an inventory is an attempt to locate every site within a specified region or, in the case of a right-of-way, every site along the right-of-way. The inventory requires covering the surface on foot, horse-

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J. J. HESTER

back, or vehicle, in transects at intervals of 100 yards or less. This intensive examination requires field crews of from 2 to 6 people. Such a crew can cover about one square mile per day on an average. The primary limitation affecting inventory is the difficulty of access of the terrain. An inventory produces as the end product an itemized description of each site, its location on a suitably detailed map, photographs, and a collection of artifacts from the surface of each site. Costs of an inventory range from 25 cents to more than one dollar per acre. An inventory is required to adequately prepare an Environmental Impact Statement.

Survey - a survey is an extension of an inventory. In addition to site location, the site collections are analyzed and each site is assigned to a culture period or periods. The analysis includes such items as laboratory study of the artifacts, cleaning, labeling, and typological analysis. If acquired, any datable samples are submitted for dating. The site types and artifacts are described in a publishable report which synthesizes all of the known archaeological data in the region studied. This report includes regional and site maps, photos of artifact types, and photos of individual sites. The laboratory analysis and report preparation requires an additional staff and normally requires from 3 to 4 times as much time as was spent in the field collection of the data. Therefore a survey costs about four times as much as an inventory or 2 to 4 dollars per acre.

Testing - Test pitting of sites is often the only way in which their character can be assessed--both their depth and complexity, and their age and cultural affiliation. Testing can add up to 25 percent additional to the costs of the survey work.

Excavation - In a salvage situation in which sites will be destroyed as a result of construction, excavation is often the only possible means of salvage of information. Sites are selected for excavation on the basis of a survey. The archaeologist's goal is to select a representative sample of every type of site from every time period. The sites so selected typically range in number from 5 to 10 percent of the sites located on the survey. Excavation costs are individually determined on the basis of the number, size, and complexity of the sites selected. Such costs typically range from 5 to 10 times the costs incurred in survey, although they may be even greater. All excavated materials are subject to intensive laboratory analysis, description, and publication. Therefore, excavation projects of any magnitude require a separate full-time staff of laboratory personnel.

Alternatives To Excavation - Given proper survey data, it is often possible to restructure projects to avoid site destruction. Sites may be avoided by changing right-of-way or plant locations. Sites may also be protected by fencing and left undisturbed even though the surrounding terrain is modified by tree cutting, bulldozing, strip mining, and the like. Any alternative to excavation that results in site preservation

is preferable, as we simply do not have the finances or manpower to excavate every threatened site of importance.

Logistics - Field examination of sites requires intensive coverage of the land surface. Such coverage requires 4-wheel drive and other suitable means of exploration. Difficulty of access is no excuse for the non-examination of terrain. No terrain is eliminated from survey without an adequate on-the-ground assessment. The fieldwork is not modified to fit access routes. If access is difficult, the work simply takes longer.

Costs - In archaeological work, the personnel costs are high; other costs in rank order are personnel, maintenance, equipment, travel, and supplies. Laboratory costs are increasing at a rate greater than inflation due to the increasingly sophisticated techniques that are being employed.

CONCLUSIONS

In the course of mineral exploration, once the decision has been reached to develop a specific tract, the developing corporation should seek professional advice as to which antiquities legislation applies to that particular tract. Contracting the state and Federal agencies listed above is the most expedient way to make such an assessment. If an archaeological inventory is required, the corporation should contract with a professional archaeologist to conduct the work. References as to qualified persons may be obtained from the Office of the Colorado State Archaeologist or the Midwest Archaeological Center. Once a contract has been arranged, it is the responsibility of the archaeologist to obtain the necessary state and Federal permits and to carry out the specific provisions on those permits. Suitably trained archaeologists are in short supply. Therefore, advance planning is necessary to insure that competent people will be available when a project is initiated. The scheduling of the archaeological work early in a project has another advantage--namely, that alternative routes may be selected which can avoid the archaeological sites. Such a procedure both preserves sites for the future and reduces the necessary salvage expenditures. If the corporation allows sufficient lead time for the necessary archaeological work and clearances, then the antiquities laws should pose no real obstacle to the orderly development of mineral resources.

REFERENCES

- American Society of Conservation Archaeology, 1974: Newsletter, July.
- Department of the Interior, Bureau of Land Management, 1973, Modification of oil shale withdrawal in Colorado, Utah, Wyoming - sale of oil shale leases: Federal Register, v. 38, no. 230, pt. III, p. 33196, November 30.

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